Headline	Diamond Building is shinning in Putrajaya		
MediaTitle	Sin Chew Daily		
Date	05 Jul 2018	Color	Full Color
Section	Metro Edition A	Circulation	294,476
Page No	8	Readership	883,428
Language	Chinese	ArticleSize	1583 cm²
Journalist	N/A	AdValue	RM 49,780
Frequency	Daily	PR Value	RM 149,340

[redacted]

都市名樓

建筑造就了一座城市的面貌，一栋栋别树一帜的建筑物，则塑造了一个城市的形态。

左图：顶楼安装353片太阳能光伏模板，并将能源供应给国能。

中图：从底层停车场走出来，就是“沉没的花园”，停车场提供自然通风。

右图：室内使用绿色标签的建筑材料，包括天花板、漆料及地毯都是再循环和有机原料。

绿色“鑽石”

能源委會總部實現低碳節能

閃耀布城

報道：莊舜婷　**攝影**：蔡偉傳

一颗钻石矗立在布城第二区，成为闪亮耀眼的建筑物！

这颗钻石其实是国家能源委员会（Suruhanjaya Tenaga）的总部，被命名为“钻石大厦”（Diamond Building），是一座绿色节能建筑物，曾荣获国内外不少建筑奖项。

钻石像征着透明度、高价值和坚固性，因此选择钻石为该建筑物的设计概念，代表能源委员会作为监管机构的角色和使命的特征，独特的钻石形状代表实现能源效率（energy efficiency）愿景。

国家能源委员会眼石大廈

地址：	No. 12, Jalan Tun Hussein, Precinct 2, 62100, Putrajaya.
楼高：	11层（8层楼及3层地下层）
面积：	1万4230平方公尺
建筑日期：	2007年9月13日
竣工日期：	2010年3月15日

哈米達：創造健康辦公環境

▲哈米达指出，钻石大厦的设计概念，代表能源委员会作为监管机构的角色和使命，展现出能源效率。

能源委员会行政及设备管理主任哈米达受访时表示，钻石大厦具备能源效率特征和低碳排放结构，符合政府推动的建筑领域能源效率计划，并致力减少温室气体排放及协助解决气候变化问题。

她指出，钻石大厦的设计概念，包括4个主要方向，即能源效率、水源效率、室内环境质量和环境保护，因此该建筑消耗更少的能源、水源和废物，并为大厦使用者创造一个健康和富有成效的办公环境。

她说，钻石大厦的设计和建造基于可持续建筑的概念，并考量各项因素，包括减少使用化石燃料、节约用水、采用可持续建筑材料、减少废物、室内环境质量、交通管理、建设和拆迁管理计划。

日光模拟演练确保采光

她表示，在进行设计阶段时，对钻石形状进行广泛的计算模拟，以确保符合预期的日光和能量性能；为了空间使用者的视觉舒适度，也进行各种日光模拟演练，以确保日光充足及分布均匀。

她指出，我国一般的建筑物，其建筑物能源效益指数（BEI）为每年每平方公尺210瓦时，而钻石大厦为每年每平方公尺85千瓦时，耗电量为2800小时，比一般建筑物降低65%。目前，该大厦的平均建筑物能源效益指数为每年每平方公尺65千瓦时。

▼夜晚的国家能源委员会总部“钻石大厦”，就像是一颗闪烁的钻石般耀眼。

▲休息区是透过屋顶从楼上的光线折射入内，并且阻隔热能，让人可舒服的坐在沙发上阅读。

打造更大園藝空間

哈米达指出，从外观看来，倒三角的钻石型，倾斜的立面让较低楼层自行遮阳，避免阳光直射进入建筑物，建筑物占地面积较小，因此打造更大的园艺美化空间。

停车场自然通风

她说，该建筑有一个“沉没的花园”，位于地下层的一个开放式空间，为地下层的停车场提供自然通风。

她表示，该建筑物获得50%的自然采光，建筑物顶部是一个玻璃“钻石圆顶”天窗。圆顶空间内则是固定式百叶窗，可过滤和折射光线，为中庭周围的办公室提供均匀的采光。

她指出，中庭的部分楼层还采用反光板（Tannenbaum），以进一步反射光线至各个楼层。所采用的是低辐射玻璃，具有反射性，允许日光进入建筑物并减少太阳的热量。

她说，位于7楼的休息区，是透过屋顶从楼上的光线折射入内，让人可舒服的坐在沙发上阅读。

▲由于玻璃窗户为倾斜状，因此在每层的窗户上添加一个反射光线的横梁，让室内光线更均匀。

▲钻石大厦还有个“空中花园”围绕，提升绿色园艺空间。

▲钻石大厦顶楼充分发挥能源效率，包括有太阳能光伏模板、储雨系统等。

▶钻石大厦获得国内外各大建筑奖项，成为绿色建筑的楷模。

太陽能提供10%能源

哈米达指出，建筑顶楼安装353片太阳能光伏模板（Photovoltaics），总容量为71.4千瓦峰值（kWp），而提供给国能，预计生产的能源占建筑物能源需求的10%。

她表示，在建筑室内不会发现一般的石灰天花板，而是采用100毫米厚度的板，以减少建筑物中的热量吸收。

她说，室内所使用的是绿色标签的建筑材料，天花板是采用发挥发性有机化合物（VOC），由30%的回收材料组成。墙上漆料选择发挥发性有机化合物的漆料，就连办公楼内的地毯里的原料有10%的再循环原料。

回收“灰水”減少65%消耗

她指出，在用水效率方面，该建筑物采用雨水收集、高效水管及使用从洗手盆回收的“灰水”（Greywater），减少65%以上的水源消耗。

“我们将所收集的雨水用于抽水马桶，为进一步提升建筑物的用水效率，从洗手盆收集的‘灰水’也被循环利用，作为灌溉园艺花园。”

◀个建筑物提供自然采光。钻石大厦内中庭的顶部是一个玻璃“钻石圆顶”天窗，为

▶钻石大厦是一座绿色节能建筑物，独特的钻石形状代表实现能源效率愿景。

DATE: 05 Jul 2018 SECTION: Metro Edition A
MEDIA TITLE: Sin Chew Daily PAGE NO: 8

THE SHINING GREEN "DIAMOND" IN PUTRAJAYA
EC HEADQUARTERS' LOW-CARBON, ENERGY-SAVING ACHIEVEMENTS

A shining diamond is standing in the second district of Putrajaya.

This diamond is actually the headquarters of Energy Commission (Suruhanjaya Tenaga), namely "Diamond Building", and it is an energy-saving building that had won many architectural awards at home and abroad.

Diamond symbolises transparency, high value, and robustness. Therefore, diamond was chosen as the design concept of the building, representing the role of the Energy Commission as the regulatory body. The unique diamond shape represents a vision for achieving energy efficiency.

Hamidah: Creating healthy working environment

Head of EC Administration & Facilities Management, Hamidah, said the Diamond Building was characterised by energy efficiency and low-carbon emissions, in line with the government-driven energy efficiency programme in the construction sector, and it was committed to reducing greenhouse gas emissions and helping to address climate change.

She pointed out that the design concept of the Diamond Building included four main directions, namely energy efficiency, water efficiency, indoor environmental quality and environmental protection, and therefore, the building could consume less energy, water and waste, creating a healthy and productive office environment for building users.

She said that the design and construction of the Diamond Building was based on the concept of sustainable building and various factors had been considered, including reduction in fossil fuels usage, water conservation, sustainable building materials, waste reduction, indoor environmental quality, traffic and transport management, construction and demolition management plan.

Daylight simulation exercises to ensure daylighting

She said that extensive calculations of the diamond shape were performed during the design phase to ensure that the expected daylight and energy performance were met; for the visual comfort of the space users, various daylight simulation exercises were also carried out to ensure that the daylight was adequate and evenly distributed.

She pointed out that the building efficiency index (BEI) of general buildings in Malaysia was 210kWh/m2 per year, while Diamond Building was 85kWh/m2 per year at 2,800 hours usage, a 65 per cent reduction in energy consumption. At present, the building's average BEI is at 65kWh/m2 per year.

Creating a larger gardening space
Hamidah said that the inclined facade of the inverted triangle diamond appearance allowed the lower floor to shade itself, avoiding direct sunlight into building, and a smaller building footprint resulted in a larger area for landscaping.

Natural ventilation at parking space
She said the building had a "sunken garden" located at the basement which provided natural ventilation to the parking area at the basement level.

She said the building was designed to obtain 50 per cent of its daylight needs from natural lighting, the crown of the building was a "diamond dome" skylight made from laminated tempered glass, and there were fixed blinds within the dome space that filter and diffuse the daylight to provide even and glare-free daylight for the offices around the atrium.

She pointed out that Tannenbaum reflector panels were installed at part of the levels at atrium to further reflect light to each floor, and the glass facade was installed with reflective low-emissivity glass, allowing daylight into the building and minimising heat from the sun.

She said the light at the lounge area at the seventh floor was refracted from the roof, making it comfortable for people to sit on the sofa and read.

Solar energy provides 10 per cent power source
Hamidah said, there were 353 units of photovoltaics panels on top of the building, with a total installed capacity of 71.4 kWp. The energy produced for Tenaga Nasional Berhad was estimated to supply 10 per cent of the electricity supply in the building.

She said, to reduce heat absorption in the building, the roof top area was insulated using boards with a thickness of 100mm.

She added, Green labelled plasterboards were used for the ceiling and the internal partitions. The plasterboards had low volatile organic compound (VOC) emission and had 30 per cent recycled content. The floor carpeting was also green labelled for low VOC emission and had at least 10 per cent recycled content. The interior paint used in the building was also of low VOC content.

Recycled greywater reduce 65 per cent consumption
She said, greywater collected from the wash basins was also recycled to irrigate the wetland at the ground floor to further optimise the water efficiency of the building. This reduced potable water usage by more than 65 per cent, she added.

"Rainwater harvested is used for toilet flushing, combined with efficient water fittings such as dual flush toilets, waterless urinals and water taps equipped with aerators."